

The uses and functions of ponds within early landscapes in the east Midlands*

by Stephen G. Upex

Abstract

Ponds are a neglected historic feature of the landscape. They vary in their dates of construction, many being related to the open fields of the pre-enclosure period where they formed an integral part of the farming system. Accounts of early enclosures also record their construction. Ponds provided water for livestock and draft animals, they linked with drainage systems and they also had miscellaneous functions such as being used for retting cloth and providing manure from pond cleaning. The present paper draws on both the field evidence of surviving ponds but also map and documentary materials to review the numbers, uses and origins of ponds in 26 parishes on the Cambridgeshire-Northamptonshire border.

Ponds are an everyday feature of the rural landscape yet there has been little discussion of their creation, dating or initial usage.¹ This paper reports the results of recent fieldwork in the east Midlands carried out between 1983 and 2002 in which ponds have been recorded for selected parishes and their distributions, functions and dates analyzed.² Ponds can have had a varied range of functions including being used as sources of water, as fishponds, as ponds with industrial uses such as hammer ponds or they may be former quarry or 'borrow pit' sites. The research for this paper has concentrated on surviving ponds, which related to pre-enclosure open fields or areas of land that were enclosed at an early period. Such ponds appear to have formed an integral part of the agricultural systems of the area and were used mainly for watering stock and draft animals as well as aiding drainage. The fieldwork excluded ponds within village built up areas such as that shown on an early map of Maxey in 1714, nor did it include clearly defined medieval ponds associated with either moated sites, medieval garden remains, the sites of fishponds or specific ponds found in villages for such functions as the retting of

* I am grateful to the many farmers and landowners who gave permission to survey their land during the course of this research. Thanks are also due to the Nene Valley Archaeological Trust and staff at Peterborough Museum, Northampton Records Office, Huntingdonshire Records Office, and the National Monuments Collection. The late Sir Peter Proby allowed generous access to the library at Elton Hall.

¹ N. Harvey, *The industrial archaeology of farming in England and Wales* (1980), esp. chs 3 and 4; H. F. Cook, *medieval landscapes: settlement, society, environment* (2003).

'Field-scale water management in southern England to AD 1900', *Landscape Hist.*, 16 (1994), pp. 53–66; H. F. Cook and T. Williamson (eds), *Water management in the English landscape* (1999); T. Williamson, *Shaping*

² P. J. Williams *et al.*, *Lowland pond survey* (1996), p. 9 define a pond as a body of standing water between 25 sq. m. and 2 ha. which holds water for at least 4 months of the year.

material.³ It is also worth reporting that there is no evidence of any so-called dewponds within the area. Such ponds have been fairly extensively covered within the literature. Nigel Harvey has described them as ‘... a rather ordinary sort of pond which man has chosen to afflict with a quite extraordinary sort of mythology, for dewponds are filled not by dew but by rain’.⁴

It is difficult to decide from the available field and archival evidence how many ponds merely coincided with naturally formed hollows or depressions in the ground. Naturally occurring water supplies would almost certainly have been maintained, used and modified by man as an alternative to digging artificial ponds. A few ponds of this sort survive in the east Midlands where natural springs occur. In Collyweston parish (Northants.), small ponds based on springs in the former Conduit Field are mentioned in 1723.⁵ At Harringworth and Gretton similar springs were noted during the course of fieldwork and can be linked to features shown in pre-enclosure documents.⁶

Evidence from the Roman period indicates that some springs and ponds – such as the springs feeding the villa baths at Cotterstock – were utilized for water. On other sites ponds appear to have been artificially created during both the Iron Age and the Roman period.⁷ O. G. S. Crawford pointed out as early as the 1960s that the names given to some ponds such as ‘mere’ or ‘well’ may indicate either a natural origin or a very early construction date. At Great Gidding it has been suggested that the element ‘mere’ in Flittermere Pond is associated with Anglo-Saxon hedge-lines and the establishment of the parish boundaries. At Elton and Warmington the element ‘well’ in Caldwell Pond, Wells-Slade Pond and Boswell Pond are all probably associated with surviving natural springs.⁸ However field evidence indicates that a considerable number of ponds are not related to spring sources for their water and must be artificially

³ To some extent ponds within these categories have been well reviewed already, see for example, B. K. Roberts, ‘Medieval fishponds’, *Amateur Historian* 7 (1966), pp. 119–25; J. M. Steane, ‘Medieval fishponds in Northamptonshire’, *Northants Past and Present* 4 (1970), pp. 299–309; C. C. Taylor, *Village and farmstead: a history of rural settlement in England* (1983); and the publications of the Moated Site Research Group. For the pond at Maxey see Northamptonshire Records Office (hereafter NRO), X 5155/7; also NRO, F(M), misc. vol. 99. For ponds associated with retting see G. E. Evans, *The horse in the furrow* (1960), p. 126; and for garden remains and ponds see the example at Steeple Gidding (Cambs) in A. E. Brown and C. C. Taylor, ‘Cambridgeshire earthwork survey, II’, *Proc. Cambs. Anti. Soc.*, 66 (1977), pp. 85–102.

⁴ Harvey, *Industrial archaeology of farming*, p. 64; also E. A. Martin, ‘Some observations on dewponds’, *Geog. J.*, 34 (1912), pp. 74–95; id., *Dewponds, history, observation and experiment* (1915); C. Hayfield and P. Wagner, ‘From dolines to dewponds: a study of water supplies on the Yorkshire Wolds’, *Landscape Hist.*, 17 (1995), pp. 49–64. It is worth pointing out that dewponds seem to have been designed for the collection of water mainly derived from rainfall, snow melt or run-off but of course there

would have been minute accumulations of dew which would have added to this supply.

⁵ NRO, Collyweston X 580.

⁶ NRO, map 4527 (c. 1619) and map 763 (c. 1732). In Norfolk natural depressions were seen as the product of solution hollows and periglacial features, see H. Prince, ‘The origins of pits and depressions in Norfolk’, *Geography* 49 (1964), pp. 15–32 and the comments about the use of springs and their modification in Derbyshire in A. Harris, *Industrial archaeology of the Peak District* (1971), pp. 146–7.

⁷ S. G. Upex ‘The Roman villa at Cotterstock, Northamptonshire’, *Britannia*, 32 (2001), pp. 57–91; D. F. Mackreth, ‘Orton Hall Farm; a Roman and early Anglo-Saxon farmstead’, *East Anglian Arch.* 76 (1996), p. 220.

⁸ O. G. S. Crawford, *Archaeology in the field* (1960), pp. 123–31; E. Pollard, M. D. Hooper and N. W. Moore, *Hedges* (1974), p. 81; Elton Hall Library (hereafter EHL), uncatalogued Ms volume, ‘Survey of Elton’ (1605), fo. 63. Ponds used or constructed in the Anglo-Saxon period are also discussed by A. Everitt, *Continuity and colonization: the evolution of Kentish settlement* (1986), p. 169.

created features. Some appear to be comparatively recent, others are linked to the enclosure of land at various times while others still are clearly of a pre-enclosure date and related to the open fields of the area.

The recent decline in the numbers of ponds caused by modern mechanization and the drive for increasing field size has now been halted. The uses of ponds have changed from their original functions of watering stock and aiding drainage. The present interest in ponds relates more to their ecological and landscape amenity functions. Recent research shows that they provide an important biodiversity resource, accommodating over half of all British wetland plant species, while at the same time one in seven ponds are used for leisure activities including fishing and shooting or are deemed to enhance the 'scenic value in the landscape'.⁹

I

The study area for this research was 26 parishes that straddle the Cambridgeshire – Northamptonshire border. Their entire area was field-walked and their ponds mapped. Other adjacent parishes were either partly walked or investigated in a more piecemeal fashion for their ponds' distributions and survival. The area under study is shown in Figure 1 and consists of a section of the Nene Valley to the south-west of Peterborough. The river Nene cuts a shallow alluvial valley through the area with clayland soils on either side, rising up to just over a height of sixty meters. On either side of the river Nene, subsidiary valleys such as that formed by the Willow Brook to the west and the Billing Brook on the east, cut into the clays. To the east of the claylands the ground falls away to the fens and the soils become alluvial and peat based.¹⁰

Ponds within the nine parishes of Ashton, Tansor, Warmington (Northants.) and Elton, Stibbington, Water Newton, Chesterton, Haddon and Morborne (Cambs.) were plotted from the early editions of the OS six inch and twenty-five inch maps, from field investigation, from air photographs and from oral accounts from farmers who remember ponds on their land which had, at the time of the survey, been filled in.¹¹ Such survey methods cannot guarantee that they create a picture of all the ponds that ever existed within the area and there is clearly no way of checking how accurate the survey method was in this respect. All of this information however gave a detailed plot of the potential numbers and the distribution of ponds within the parishes. This overall plot is shown in Figure 2 which includes both field ponds and, although outside of the scope of this paper, identified medieval ponds such as the ones at Elton and

⁹ See 'Wildlife and countryside research programme-lowland pond survey 1996: final report' at <http://www.defra.gov.uk/wildlife-countrysideresprog/findings>.

¹⁰ C. P. Chatwin, *British regional geology: East Anglia and adjoining regions* (1961); Williamson, *Shaping medieval landscapes*, fig. 8.

¹¹ OS maps covering the area at a scale of 1:2500 and 1:10,560 which show ponds in detail are held by Peterborough Museum. The first editions of the six inch to the mile maps for the area are dated 1894–6 and the first editions of the twenty-five inch to the mile maps are

dated between 1880–7. The second editions of both county sets of maps run from 1898–1901. The sets of OS maps were thought, for the purposes of this research, to be the first reliable and systematic record of ponds; earlier tithe and manuscript maps rarely show ponds other than in exceptional cases as at Maxey (see n. 3). Air photographs taken for the Nene Valley Archaeological Research Committee are also held at Peterborough Museum. Additional photographs for the area are held in the National Monuments Record, Swindon, especially the RAF vertical series taken between 1940–47.

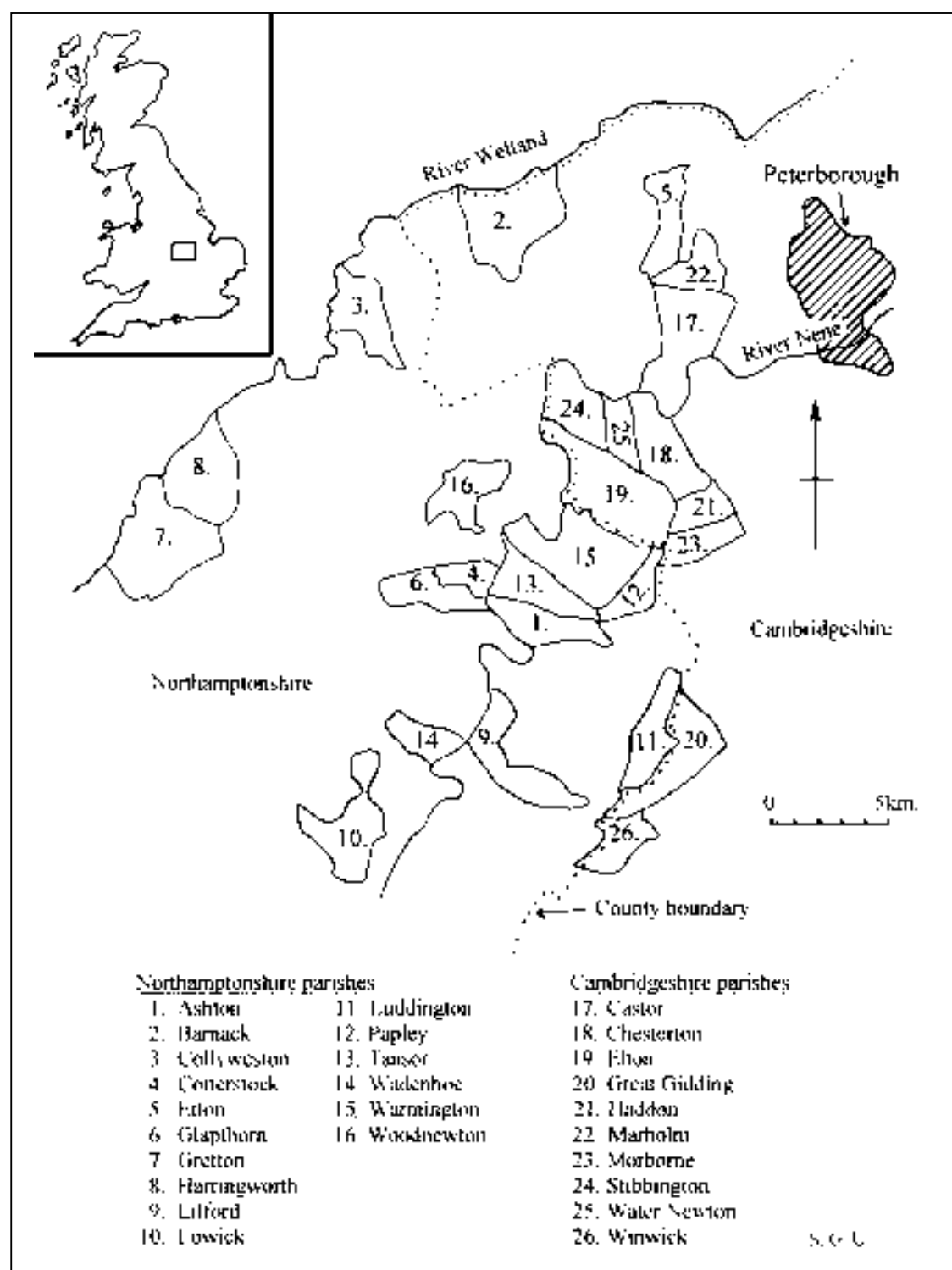


FIGURE 1. Location of parishes referred to in the text.

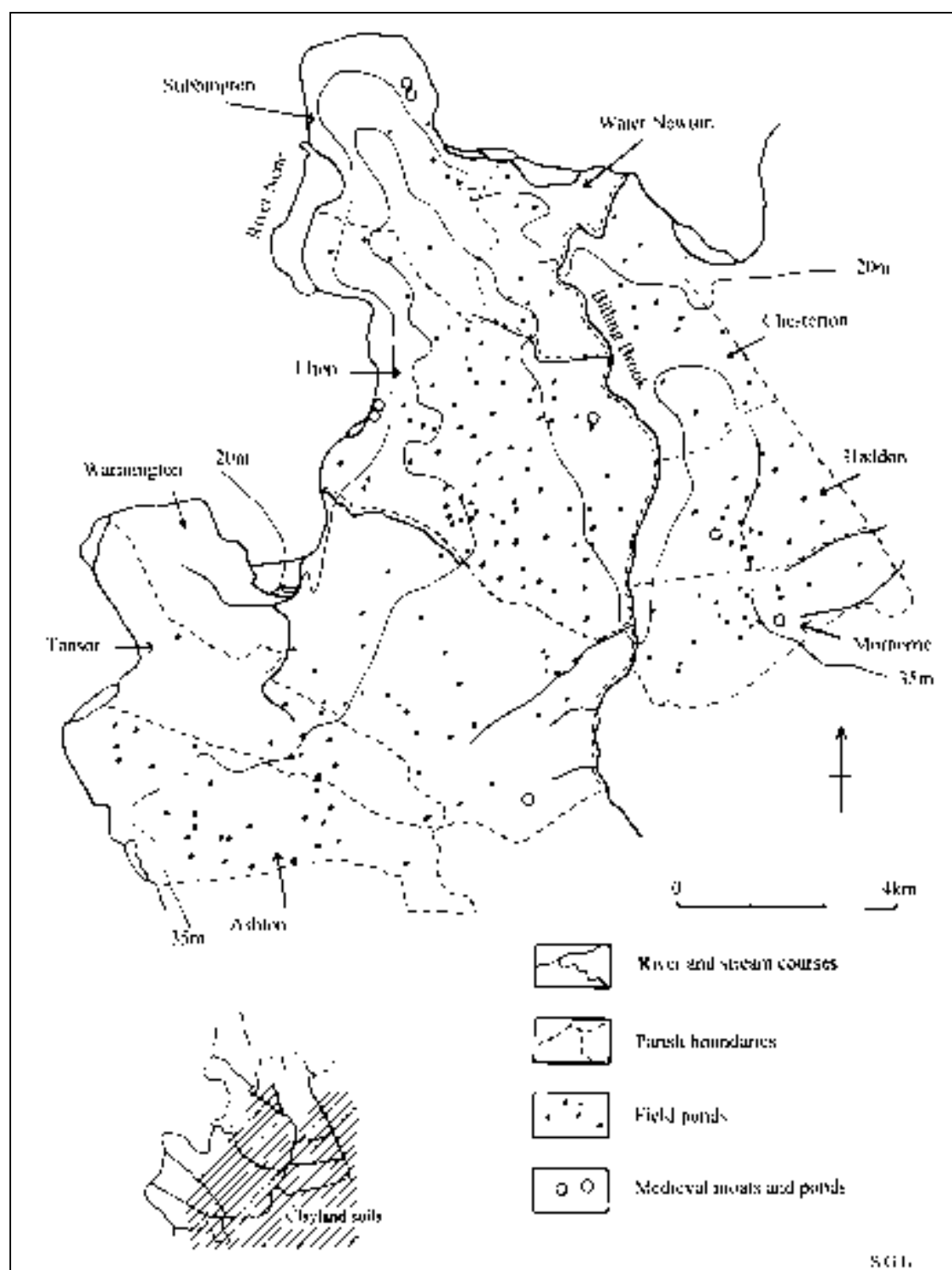


FIGURE 2. Pond distributions for nine parishes.

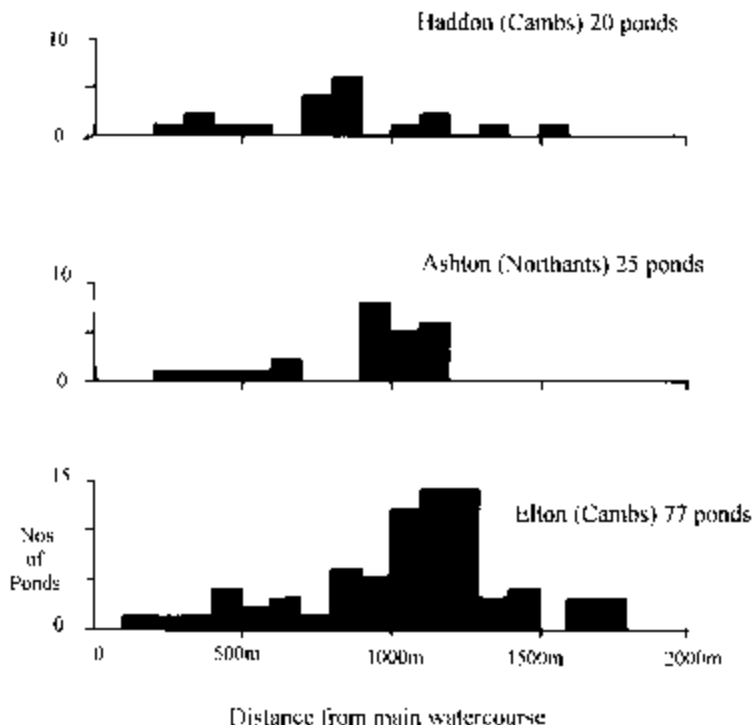


FIGURE 3. Distance decay from analysis of ponds within the parishes of Haddon, Ashton and Elton.

Haddon.¹² The overall distribution of field ponds within Figure 2 indicate that most were located on the clayland soils. In the whole of Elton parish for example 77 ponds were recorded, of which 15 (19.4 per cent) were associated with soils derived from the limestone of the Great Oolitic Series while the remaining sixty-two (80.5 per cent) ponds were sited on soils found on the Oxford and boulder clays.¹³ In addition to the geological bias in the sample, there also appears to be a link between the siting of ponds and their relationship to adjoining watercourses where they appear to be at some distance from streams and rivers. The ponds in the parishes that border the Billing Brook for example, such as Haddon, Morbourn and Elton, all have their ponds set at some distance away from this stream course (see Figure 2). Further analysis of this idea is shown in Figure 3 where a simple distance decay analysis has been employed.¹⁴ Here the total number of ponds for the three parishes has been plotted against the distance of the ponds from the nearest watercourse. This clearly shows that the further one moves from the watercourses the greater the number of ponds. At Elton, of the 77 recorded ponds there are just three ponds

¹² D. F. Mackreth, 'The abbot of Ramsey's manor at Elton', *Northamptonshire Arch.* 26 (1995), pp. 123–39; S. G. Upex, 'A note of two clayland parishes to the west of Peterborough', *Aerial Arch.* 2 (1978), pp. 32–6.

¹³ Institute of Geological Sciences, Drift series, sheet 171.

¹⁴ For a general review of the usefulness of distance decay analysis, see M. G. Bradford and W. A. Kent, *Human geography: theories and their applications* (1977), ch. 8; F. J. Monkhouse and H. R. Wilkinson, *Maps and diagrams, their compilation and construction* (1976), ch. 4.

within 400 meters of watercourses but the pond numbers increase with distance until there are 42 ponds between a distance of 1000 meters and 1300 meters.¹⁵ This indicates that the ponds could have had an integral role to play in both the control of water and the provision of water for the grazing of livestock and for draft animals within the landscape. A distinctive type of pond, which it has been claimed was specifically developed for the watering of stock on the clays of south-west Cambridgeshire, west Suffolk and parts of the former county of Huntingdonshire is the 'armed pond'. These are simply ponds dug in a 'star pattern' with three to six arms extending out from a central large area of water. They are associated with pre-parliamentary enclosures and their shape is thought to enable larger herds of cattle to take water at any one time. In addition they occur at the junctions of fields, with the arms extending along the adjoining boundaries. A pond of this type at Lilford (Northants.) (see Figure 1) and another within the adjoining parish of Thurning (Northants.) have both been surveyed during the course of this study.¹⁶

II

The dates at which ponds were created are difficult to establish unless there is direct archival reference to particular ponds being dug. Such explicit evidence is hard to discover (and where it is found, it may not be possible to connect it to surviving or documented ponds). Otherwise we have to rely on relative dating methods. M. W. Beresford and J. K. St Joseph pointed out that some of the surviving ponds are clearly of a pre-enclosure date and related to open field balks and strips. They say that these are 'not modern ponds dug to water animals out at pasture, for modern ponds lie in the field corners and can often be shown to cut through the pattern of medieval ploughing'.¹⁷ The clear distinction in date is linked to the relationship of the pond and the hedge-lines of the enclosure period. Ponds that are bisected by hedge-lines were possibly created at the time of, or after the enclosure to provide water to either of the two or more adjacent fields. Pre-enclosure ponds on the other hand could be found within the central parts of the enclosed fields and at a distance from the hedge-lines.¹⁸

¹⁵ Clearly there are problems here in associating active present day watercourses with those of past periods. It is generally assumed that the watertable of the areas on either side of the River Nene has been lowered by navigation improvements. See for example H. J. K. Jenkins, 'A survey of the River Nene in the reign of James I', *Northants Past and Present*, 8 (1992), pp. 190–6.

¹⁶ O. Rackham, *Haley Wood: its history and ecology* (1975); O. Rackham, 'Armed ponds of Cambridgeshire', *Nature in Cambridgeshire*, 2 (1963), pp. 25–7; G. F. Peterken, 'Earthworks', in R. C. Steele and R. C. Welch (eds), *Monks Wood: a nature reserve record* (1973), pp. 36–9. The armed ponds at Lilford-cum-Wigsthope (TL 064815) and Thurning (TL 088829) are both typical of this class of pond – the latter is shown on the enclosure map of the parish dated 1839 (NRO, map 3008 a-e).

¹⁷ M. W. Beresford and J. K. St. Joseph, *Medieval*

England: an aerial survey (1979), p. 64.

¹⁸ Even here there are problems with the dating. At Papley, a hamlet of Warmington (Northants), ponds are associated with enclosure hedges which vary in their date. In addition a map of 1802 shows that later sub-divisions of some of the larger closes straddle the positions of pre-enclosure ponds, giving them the appearance of ponds dug in association with the enclosing phase. See, I. S. Leadham, *The domesday of inclosure 1517–1518* (2 vols, 1897), I, p. 277; M. W. Beresford, *The lost villages of England* (1963), p. 75; RCHM, *An inventory of the historical monuments in the county of Northamptonshire: north-east Northants* (1975), p. xli; Huntingdonshire Record Office (hereafter HRO), 'Map of Papley by J. Thorpe' (1802); NRO, map 2221; NRO, map 1108 (Warmington, 1621). The hedge lines at Papley are also outlined by C. C. Taylor, *Fields in the English landscape* (1975), pp. 116–17.

TABLE 1. Pond numbers within nine parishes and their locations.

<i>Parish</i>	<i>Total number of all ponds</i>	<i>Pond on openfield headland</i>		<i>Pond on open-field headland linked to enclosure hedgeline</i>		<i>Pond on enclosure hedge-line</i>		<i>Pond associated with springs and watercourses</i>		<i>Ponds with central field positions</i>	
		<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Ashton	25	14	56.0	2	8.0	2	8.0	4	16.0	3	12.0
Chesterton	15	6	40.0	4	26.6	0		4	26.6	1	6.6
Elton	77	29	37.6	19	24.6	14	18.1	6	7.7	9	11.6
Haddon	20	10	50.0	3	15.0	1	5.0	4	20.0	2	10.0
Morborne	19	10	52.6	4	21.0	0		4	21.0	1	5.2
Stibbington	9	5	55.5	2	22.2	0		1	11.1	1	11.1
Tansor	11	5	45.4	2	18.1	1	9.0	2	18.1	1	9.0
Warmington	27	13	48.1	5	18.5	2	7.4	5	18.5	2	7.4
W/Newton	9	4	44.4	2	22.2	0		3	33.3	0	
TOTALS	212	96	47.7	43	19.5	20	6.4	33	15.5	20	9.4

Table 1 provides some comment on the relationship of pond locations and their association with five different sets of features. This shows that for all of the parishes which have been covered by detailed fieldwork and analysis, 47.7 per cent of ponds relate to open field headlands. A further 19.5 per cent are associated with both open field headlands and enclosure hedge-lines while only 6.4 per cent of ponds are linked with enclosure hedge-lines. This indicates that most ponds within the sample area are in fact pre-enclosure in date. Even if the figures for ponds associated with open field headlands / enclosure hedge-lines (where a pre- or post-enclosure date is uncertain – Table 1, col. 3) and those linked with certainly dated enclosure hedge-lines (Table 1, col. 5) are amalgamated, the total number of ponds of certain or probable post-enclosure date within the sample is still only 25.9 per cent.

At Elton, which was enclosed in 1779, of the 77 field ponds that have been recorded, 29 (37.6 per cent) were related to the headlands of the open field furlongs as reconstructed by linking field survey work, aerial photography and a complete terrier of the parish made in 1747.¹⁹ These ponds had no relationship to the hedges of the parliamentary enclosure period or to earlier enclosures within the parish. In addition nineteen ponds (24.6 per cent) were related both to pre-enclosure furlong boundaries and the hedge-lines of the enclosure period. Here it was difficult to tell which came first – the headland with a pond along it, which at the enclosure had a hedge-line added – or the pond being added to a hedge-line (already sited on a headland) during the enclosure or in the post-enclosure period. Most of the ponds within this category were associated with early piecemeal enclosures within the parish and the earlier enclosures in

¹⁹ Statute 17 Geo. III, c. 34, enclosure map dated 1784, HRO, pm 2/5; EHL, uncatalogued Ms volume 'Wing's survey of Elton, 1747'.

the area of the Park at Elton. In some instances it may well have been the case that pre-enclosure headlands with ponds influenced the early enclosure surveyors in the orientation or siting of the hedge-lines so that they could bisect a pond. Fourteen ponds (18.1 per cent) related exclusively to enclosure hedge-lines.

A further six ponds at Elton (7.7 per cent) were sited along slades or stream courses and were directly related to springs.²⁰ The remaining nine ponds (11.6 per cent) were sited in the middle of fields and had no relationship to either pre- or post-enclosure features. In some cases fieldwork showed that ponds cut through and therefore post-date open field ridge and furrow as was the case of a small pond at Wadenhoe (Northants.).²¹

A sample of the landscape in Elton parish is shown in Figure 4 where 25 ponds are represented. Of these, eleven ponds can be seen to be associated with headlands of the open fields, nine relate both to headlands and enclosure hedges, one pond related to a slade and four ponds were sited in the middle of fields and away from headlands.

Using the simple rule of thumb set out by Beresford and St Joseph in 1979, that the relationship of ponds to hedge-lines and open field headlands is an indication of date, it could be argued that nearly half of the remaining ponds (47.7 per cent) in the sample parishes are pre-enclosure in origin.²² This figure is certainly also higher if some of the ponds associated with both headlands and hedge-lines are taken into account.

Some ponds are also very recent in their origins. At Elton, of the nine ponds found within the middle of fields, two were created out of bomb craters of Second World War date. C. C. Taylor has given other explanations for recent pond creation including ponded depressions forming over mass animal burials.²³

Work has been carried out in detail in other local parishes which confirms the same dating conclusions. There are numerous cases of ponds being directly related to pre-enclosure headlands. At Ashton (Northants.) for example, ponds are located at regular intervals along the former headlands of the open field furlongs and the same arrangement has been recorded in other parts of Northamptonshire and Leicestershire.²⁴ Of the few ponds that are shown on pre-enclosure maps, such as that at Kimbolton (Cambs.) in 1591 and the Hog Pond at Barnack (Northants.) in the eighteenth century, all are shown on the balks, headlands and access ways between the furlongs.²⁵

There is a distinction between the ponds in parishes that are linked to the early enclosure of land and those ponds which are related to the later parliamentary enclosures within the area. At Chesterton, Haddon, Morborne and Water Newton, which were all enclosed by piecemeal agreements in the seventeenth and eighteenth centuries and within parts of Elton and Stibbington where early enclosures have been identified, the ponds in the areas of these early

²⁰ See S. G. Upex, 'The reconstruction of open-field layout from landscape evidence in Northamptonshire and Cambridgeshire' (unpublished PhD thesis, University of Nottingham, 1984), ch. 5.

²¹ See RCHM, *North-east Northants*, p. 103.

²² Beresford and St. Joseph, *Medieval England*, p. 65.

²³ Information from the late Mr. S. Mason of Elton. C. C. Taylor, *Fieldwork in medieval archaeology* (1974),

p. 27.

²⁴ Beresford and St Joseph, *Medieval England*, p. 274.

²⁵ HRO, 341. L. 13 (Kimbolton, 1591); NRO, map 4040. See also part of the 1756 map published by Hooke for the parish of Kinwarton (Warw.) which shows ponds along furlong boundaries. D. Hooke, 'The relationship between ridge and furrow and mapped strip holdings', *Landscape Hist.*, 13 (1991), pp. 69–71.

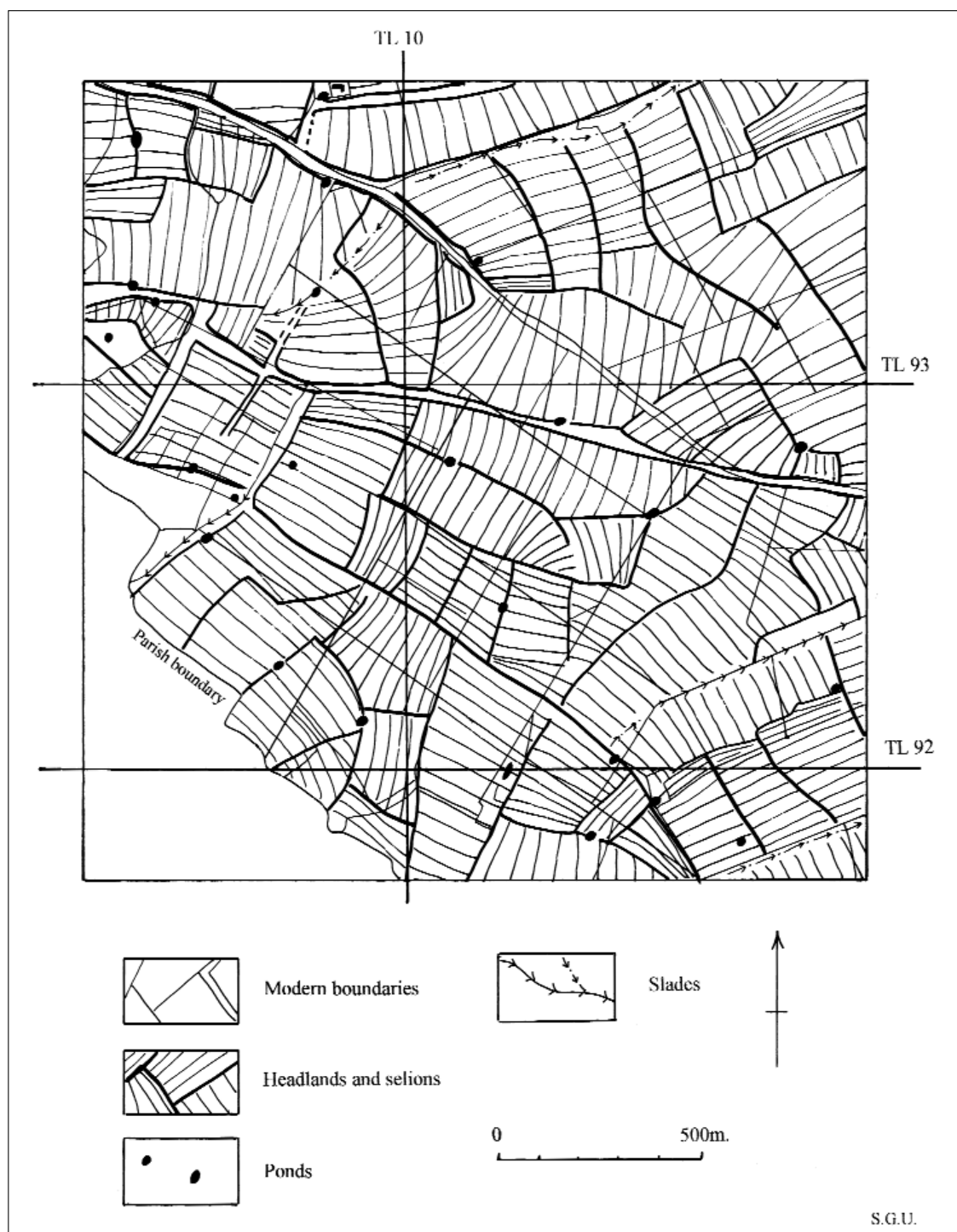


FIGURE 4. Detailed pond analysis of part of Elton Parish

Source: Fieldwork carried out during 1984–85. Aerial photographs held in Peterborough Museum archive.

enclosure are largely associated with open-field headlands on which the later hedge-lines of the enclosure were constructed. In these parishes there are few or no ponds which relate just to enclosure hedge-lines. This contrasts with other, later, Parliamentary enclosed parishes such as Warmington, Tansor, Ashton and the larger part of Elton, where the ponds link slightly more with hedge-lines and where there are fewer ponds (in percentage terms) which are sited on headlands linked to later hedge-lines. The implication here is that the earlier enclosures of the pre-parliamentary period were of whole furlongs and the newly created fields fossilized to some extent this furlong pattern. Such enclosures also therefore incorporated the existing open field headland ponds into their new hedge-lines. In some cases new ponds seem to have been dug during the process of this piecemeal enclosure as may be shown at Elton.²⁶ During the later period of Parliamentary enclosure, where whole areas were enclosed with little respect to pre-enclosure arrangements of furlongs and their existing ponds, the newly created fields and hedge-lines ignored pond positions for the most part.²⁷

III

It is not clear when most of the pre-enclosure ponds were created. Some are related to springs and are natural features, but of the artificially created ones some are of considerable antiquity and could be Roman or even pre-Roman in date.²⁸ Most however could have been created as watering places for livestock and draft animals at the same time as the open fields were being expanded and are therefore likely to be of medieval date. Ponds with names such as 'New Pond' first recorded at Wollaston (Northants.) in 1788 could already have been of considerable age by this time.²⁹ Equally impossible to date is the original date of 'Old Pond' in Castor parish shown on a map of 1846.³⁰

Springs of water were not only useful for watering stock but they could also be problematic in terms of flooding. This aspect is indicated by a court order made in 1659 for Lowick (Northants.) where the Jury stated that 'every inhabitant that hath any ground neere unto the springs or quagmires in any of the said fields shall at their own cost and charge keepe the said spring and quagmires sufficiently scoured so the fields be not anoyed by them ...'.³¹ Michael Havinden recorded a case from late seventeenth-century Oxfordshire where ponds were dug to provide water on furlongs which were temporarily withdrawn from the arable rotation of a parish and sown with sainfoin. The problem of water for stock within such furlongs was solved

²⁶ EHL, uncatalogued Ms volume, 'Account book of Sir Thomas Proby', fo. 126.

²⁷ The dates of the enclosures are as follows: Chester-ton, 1650 (HRO, Glebe terriers, I, A-D); Haddon, 1808 but with earlier enclosures taking place in the 1640s–50s (HRO, map 1808); Morborne, no known award but totally enclosed by 1808 (HRO, map 1808); Water New-ton, no known award but totally enclosed by 1674 (HRO, Acc. 590); Elton enclosed by private Act of Par-liament in 1784 (HRO, pm 2/5). Earlier enclosure in the 'Park' and the area of Sheepwalk Farm were taking place in the seventeenth and eighteenth centuries (see Upex

'Reconstructions', pp. 84–93); Stibbington, enclosed in 1810 (HRO, pm 4/15) but earlier enclosures are shown on a map of 1770 (HRO, pm 4/13). Warmington, Tansor and Ashton were all enclosed by parliamentary act and had no areas of 'ancient enclosures' other than small areas surrounding the village sites. Warmington, 1774 (NRO map 2864); Tansor 1778 (NRO, map 4608) and Ashton 1810 (NRO, map 2858).

²⁸ Mackreth, 'Orton Hall Farm', p. 220.

²⁹ D. Hall, *Wollaston: portrait of a village* (1977), p. 153.

³⁰ NRO, map T236.

³¹ NRO, SS. 3284

by 'all persons having a right of common on the sainfoin [to] contribute towards the digging of a pond'.³²

Enclosures at Elton made in the late seventeenth century in the area of the 'Park' were also provided with ponds for stock watering. Several references are given in Sir Thomas Proby's account book for 1668–9 for payments 'given to the labour[er]s at the pond working', to 'R. Thomson 16 days with his cart and 2 horses and a boy at the pond forming ...' and 'to the labour[er]s at the hill ground pond'.³³ Similarly at Lamport (Northants.) in 1576 the 'making of pooles' was done at the same time that large enclosures were made for sheep farming.³⁴ New ponds were also being dug in the vale of Pickering during the seventeenth and eighteenth centuries on the enclosure of land and in the East Riding of Yorkshire.³⁵

At Glapthorne (Northants.) a series of three court orders of 1569 indicate that ponds were being maintained within the 'neats pasture' for the watering of cattle. The first order states that 'the ponds in the neats pastures be cast and cleaned by Matynmass daie next and that all laborers in ye said tenour [tenure] be redie at the said work 4 days at such time as they shallbe summoned by the jury in pain of every laborer in defalt to cost for every daie absent 12*d.*'. An additional order then goes onto add that, 'every husbandman [should] be redy with their carts to qarie [quarry] stone for ye mending and clening of ye said ponds in payn to cost every man being absent with his syd cart 2*d.*'. The last order adds still further detail to the planned pond workings by stating, 'It[em], It is agreed that in every house throughout the town shallbe apoynted and set forth to gather stones for the said ponds before Maryynmas at such time as the house shallbe called there in payn for everi household making defalt to cost 12*d.*'.³⁶ There is no indication in these orders to show what the stone, which must have been either quarry stone or stone collected off the fields, was used for. It may have been to form some type of embankment around the ponds to act as a dam or it may have been to cover the base of the pond so as to make some form of hard standing for the cattle to walk on as they drank.³⁷ Whatever the reason for the stone, the work had to be carried out before Martinmas Day (11 November) when the pasture would be less productive and access would not ruin the earlier crop of grass.

Earlier accounts of ponds being either made or constructed are rare. In most cases it remains unclear if the references are referring to ponds within enclosed or unenclosed areas or even within settlement areas. In 1354 for example, John Polebrok was fined 3*d.* because 'he did not come to make the pond' at Elton.³⁸

³² M. A. Havinden, 'Agricultural progress in open field Oxfordshire', *AgHR* 9 (1961), pp. 76–7.

³³ EHL, uncatalogued Ms volume, 'Account book of Sir Thomas Proby', fo. 126.

³⁴ M. Finch, *The wealth of five Northamptonshire families, 1540–1640* (1956), p. 16.

³⁵ E. Kerridge, *The agricultural revolution* (1967), p. 240; A. Harris, *The rural landscape of the East Riding of Yorkshire, 1700–1850* (1961), p. 72.

³⁶ NRO, Bru. I, V, 61.

³⁷ It is unfortunate that the area of the 'neats pasture'

remains unlocated – unless of course it was a reference to some form of rotated commonable grassland. Early maps of the parish of Glapthorne do not show any area referred to as 'neats pasture' but there is an area called 'Cowpasture' on pre-enclosure maps of 1614 (NRO, map 4526/1) and 1635 (NRO, map 2991/5). None of the maps show ponds in the Cowpasture and recent fieldwork in the area has failed to locate any ponds that would link with these earlier references.

³⁸ PRO, SC2/178/35.

IV

How ponds were integrated into the overall management of the open fields remains a mystery. There are no surviving court orders linking ponds to open field management for any of the parishes within this study.³⁹ Clearly draft animals would need watering during the periods when the open fields were being ploughed and ponds at a distance from the watercourses would have been useful for this purpose. Grazing stock would also need a water supply when the fields were laid down to fallow and again ponds would have been used. The supply of water provided by ponds would also presumably have been taken into account when the fallow was temporarily fenced by the 'hurldemasters'. In court orders for Elton throughout the seventeenth century, hurdles were required from all of the tenants with common rights on the fallow. For example, John Southgate was fined in October 1677 for 'not laying out his full number of hurdles against the order' along with two other tenants.⁴⁰

It seems probable that the majority of ponds within open and enclosed fields were for watering animals. However, there are other possible reasons for their creation. Pits made for the digging of marl so that it could be spread on the fields, a practice which is clearly indicated by several writers, could come to hold water.⁴¹ In Northamptonshire and Cambridgeshire marl digging is mentioned for parishes such as at Winwick (Cambs.) where 'large old delves ... [had been] ... digged for marle' before 1721.⁴² At Braybooke the positions of marl pits have also been identified as remaining pond sites.⁴³ A series of marl pits have recently been excavated at Great Houghton in Northamptonshire. These pits, which follow the lines of medieval furrows within the open fields, were clearly being cut in the thirteen and fourteenth centuries and would have ponded water although they appear to have been filled in at a later date.⁴⁴

Other forms of digging and quarrying also seem to have produced ponds within field areas. Fieldwork in the parish of Etton in the Welland valley (Cambs.) shows that small ponds now fill former quarry sites that were dug at an unknown period for gravel and sand. These small ponds were located exclusively along the former headlands and balks of the former open fields within the parish and must date to some point before the enclosure of the open fields in 1819.⁴⁵ Amongst additional reasons for making ponds is the need to soak material such as thatch, straw and thistles before it could be used as a manure. However by the late eighteenth century the benefits of this practice were considered to be of little value by commentators such as Arthur Young.⁴⁶

³⁹ At Elton for example the court orders run, with only few breaks, from the thirteen century to the time of the enclosure in the late eighteenth century. However the few references to ponds that do occur, such as that to 'Halpond' in 1520 (PRO, SC2/179/85) or to 'Codwell Pond' (EHL, uncatalogued Ms volume, 'Survey of Elton, 1605', fo. 63), only name the ponds as reference points and do not mention any aspect of their management.

⁴⁰ EHL, uncatalogued court orders, 11 Oct. 1677.

⁴¹ Kerridge, *Agricultural revolution*, pp. 244–49.

⁴² J. Morton, *The natural history of Northamptonshire*

(1712), p. 61.

⁴³ M. W. Beresford, 'Ridge and furrow and the open fields', *ECHR* 1 (1948), pp. 34–45.

⁴⁴ A. Chapman, 'Excavation of an Iron Age settlement and a Middle Saxon cemetery at Great Houghton, 1966', *Northamptonshire Arch.*, 29 (2001), p. 20.

⁴⁵ NRO, map 4540, 1–6.

⁴⁶ R. Lennard, 'English agriculture under Charles II', *ECHR* 4 (1934), p. 33; Kerridge, *Agricultural revolution*, pp. 180–240; A. Young, *General view of the agriculture of the county of Lincolnshire* (1813), p. 267.

Some ponds recorded during modern field survey work were seen to be linked to furlong drains and gutters created within the former open fields.⁴⁷ In such cases the ponds could well have acted as sumps or soakaways. At Haddon (Cambs) on the heavy soils derived from the Oxford and boulder clays, areas of surviving ridge and furrow from the common fields had furlong gutters dug around and along headlands and balks which linked with ponds in a complex drainage pattern (Figure 5). It is difficult to say with certainty that the Haddon drainage system was a contemporary open field feature but the layout of the furlongs and gutters, and their relationship with the ponds, suggests that this was the case.⁴⁸

Archival details related to the digging and the maintenance of such furlong gutters and drains is limited. Occasionally there are references in manorial court proceedings to gutters, drains and ditches but it is often unclear exactly where these were sited in relation to the furlongs.⁴⁹ There are references to 'common ditches' which do seem to be within the furlong systems at Luddington (Northants) in 1713. At Woodnewton (Northants.) in 1620, court orders were issued instructing individuals to 'cleanse common gutters and drains'.⁵⁰ The court orders for Elton also refer to common drains within the arable fields. In 1674, 1676 and 1678 orders state that '... everyone drain his common ditches sufficiently under pain of 2s. 6d.'. ⁵¹ At Maxey in 1714 a dyke system recorded on a contemporary map had been dug along the side of a wet furlong and truncated the ends of the selions.⁵² Such patterns of furlong drains with their links to ponds are very different to the drainage systems which operated within nineteenth-century enclosed fields or meadow areas.⁵³ How effective as soak-a-ways ponds were on the heavy clay soils of the area is uncertain but the practice was outlined for Norfolk in the late eighteenth century by William Marshall who describes pits dug and lined with branches and used as field soakaways.⁵⁴

⁴⁷ See Upex, 'Reconstructions' pp. 265–76.

⁴⁸ The date of the enclosure of Haddon remains uncertain. The parish was totally enclosed by 1808 (HRO, map 1808) and prior to this a glebe terrier of 1703 indicates a four-field layout (HRO, Glebe terriers, I, A–D). However, accounts of 1648 and 1654 suggest that partial enclosure was already underway in the mid-seventeenth century (HRO, Dryden coll, D (CA) 304, 305). Ground surveys of the area were made during 1983 and since then the ridge and furrow has been ploughed. Air photographs of the furlongs in this area are lodged at Peterborough Museum.

⁴⁹ See for example NRO, Acc. 1972/179–/1109; BL, Add. Ch. 25811; NRO, map 1093 (Castor 1843).

⁵⁰ NRO, Montage coll., misc. ledger 145; Westmoreland coll., box 5, bdle 5, no 1.

⁵¹ EHL, Court book A, 1665–1728. Similar orders relating to common ditches occur in the same source in 1673, 1688 and 1719. Earlier references to common ditches at Elton also occur in 1527 (PRO, SC2/179/86); 1458 (PRO,

SC2/179/88) and 1297 (PRO, SC6/878/14, m. 10). At Messingham (Lincs.) an order of 1599 states that any inhabitants of the parish 'which have any water gutters between neighbor and neighbor shall sufficiently ditch and scower the same as oft as nede shall require'; E. Peacock, 'Notes from the court rolls of the manor of Scotter', *Archaeologia*, 46 (1881), p. 385. Some of the gutters at Kingsthorpe (Northants) were significant enough to be given names such as 'Bettes gutter', 'Pages gutter' and 'Cowkes gutter'; J. H. Glover, *Kingsthorpiana, or researches in a church chest* (1883), p. 94.

⁵² NRO, F(M), misc. vol. 99, fo. 12.

⁵³ T. Williamson, 'Post-medieval field drainage', in Cook and Williamson (eds), *Water management*, pp. 41–52; A. D. M. Phillips, 'Arable land drainage in the nineteenth century', in id., *Water management*, pp. 53–72; Cook, 'Field-scale water management', pp. 53–66.

⁵⁴ W. Marshall, *The rural economy of Norfolk* (1787), p. 132.

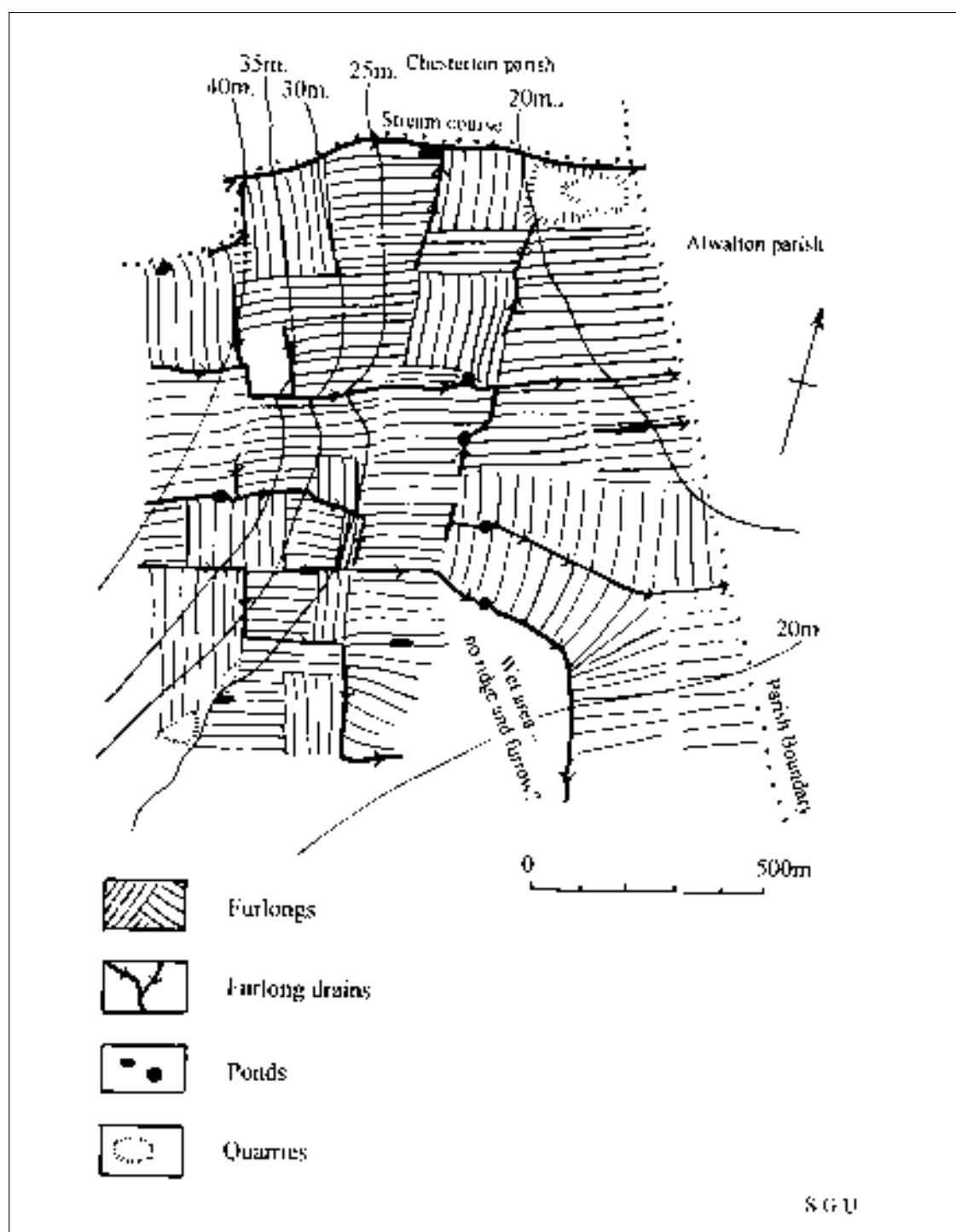


FIGURE 5. Ponds linked to furlong drainage in Haddon parish.

Source: Fieldwork carried out during 1984–85. Aerial photographs held in Peterborough Museum archive.

V

Whilst there is little precise evidence for the dating of ponds, some are clearly of considerable antiquity while others have been created by changes within the landscape such as the enclosure of land. More research is needed to relate landscape change to pond numbers. This paper shows evidence that almost half of the ponds within the landscape could be of pre-enclosure date and relate to the workings of open field systems in which water was needed both for draft animals and also for animals grazing the fallow. In some areas of the Midlands writers have suggested an expansion in the numbers of ponds as a response to past expansions of grassland and the need to water stock, but more work is again needed here to document such developments.⁵⁵ The evidence that the early enclosures of the sixteenth and seventeenth centuries within the area of the east Midlands converted arable to grass land is clear. It seems that the construction of ponds must have gone hand in hand with such enclosures to provide water for the increased livestock that such economic changes brought.⁵⁶ Ponds therefore need to be considered an integral part of farming systems and one which we overlook at our peril.

⁵⁵ J. Broad, 'Alternative husbandry and permanent pasture in the Midlands, 1650–1800', *AgHR* 28 (1980), p. 87.

⁵⁶ S. Porter, 'An agricultural geography of Huntingdonshire, 1610–1749' (unpublished M.Litt thesis,

University of Cambridge, 1973), pp. 116–33. See the case outlined for Elton within the 'Park' area and at Sheepwalk Farm (n. 27), and the 'making of pooles' at Lamport (n. 34).